SAI Group
12 Industrial Way
Salem, NH 03079
603-421-0470

June 12, 2024

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T)
347 Gilead Street (Hebron Lions Fairgrounds), Hebron, CT 06248
N 41.670225
W 72.391215

Dear Ms. Bachman:

AT&T intends to install a temporary cellular communications facility for service during the Hebron Harvest Fair 2024 in Hebron, Connecticut. Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, of construction that constitutes an exempt modification under R.C.S.A. § 16-50j-72(d). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Peter D. Kasper, Chairman of the Board of Selectmen and to Matthew Bordeaux, Town Planner for the Town of Hebron, as well as to the property owner.

AT&T operates under licenses issued by the Federal Communications Commission (FCC) to provide mobile communications service in Tolland County, which includes the area to be served by AT&T's proposed temporary installation. The proposed temporary facility would be installed at 347 Gilead Street on property owned by the Hebron Lions Agricultural Society Inc. (Hebron Lions Club).

Proposed Temporary Facility

The proposed temporary cell site meets the criteria set forth in R.C.S.A § 16-50j-72(d) for temporary cellular service for events of statewide significance. The site is necessary to provide additional system capacity to accommodate increased communication needs during Hebron Harvest Fair 2024. This facility may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

The Hebron Harvest Fair 2024 will be held at the Hebron Lions Fairgrounds in Hebron on September 5th – 8th 2024. The temporary cell site will be located within the Fairgrounds property, off Lions Ave as illustrated in the attached Aerial Photograph. An e-mail from Hebron Lions Club Vice President John Johnson Jr. authorizing AT&T to use the location for this purpose is attached. AT&T's equipment will be deployed to the Fairgrounds on or around August 15th. The site will begin on-air operations on August 25th and be removed on or around September 13th.

AT&T's temporary cell site will consist of radio equipment installed in a fully-contained vehicle referred to as a Mini Super COLT (Cell on Light Truck) with two built-in antenna masts that will be extended to a height of approximately 59 ft above ground level. Power and Telephone connections will be provided from the existing utility services at the Fairgrounds. The proposed temporary cell site will not increase noise levels by six decibels or more.

The COLT will be fitted with one Matsing MS-6.3 DB90 and two (2) Galtronics GP2406-06670 antennas at a centerline of 52 feet, three (3) Kathrein 840-10520 at 44 feet and three (3) Ericsson AIR6449 B77D Antennas at 40 feet above ground level. The total height of the entire structure with appurtenances will be approximately 60 feet.

Power Density Calculations

AT&T's temporary cell site will not result in a total radio frequency electromagnetic radiation power density, measured at six feet above ground level at the temporary tower location, at or above State or Federal standards. Please see attached Radio Frequency Emissions Report. The report shows that AT&T's temporary transmissions from the temporary cell site will result in a maximum cumulative percent of MPE that is calculated to be 47.15% of the FCC limit for general population / uncontrolled environments.

Conclusion

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Please feel free to call me at (860) 670-9068 with any questions regarding this Notice. Thank you for your consideration in this matter.

Sincerely,

Mark Roberts

Mark Roberts
Consultant for SAI
Mark.Roberts@QCDevelopment.net

Attachments

cc: Peter D. Kasper – Elected Official
Matthew Bordeaux – Town Planner
John Johnson Jr. – Hebron Lions Club

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2021.

Parcel Information

Location:	347 GILEAD ST	Property Use:	Farms/Barns	Primary Use:	Storage Building
Unique ID:	3158	Map Block Lot:	24-24	Acres:	101.4800
490 Acres:	0.00	Zone:	R-1	Volume / Page:	0094/0915
Developers Map / Lot:		Census:	5261		

Value Information

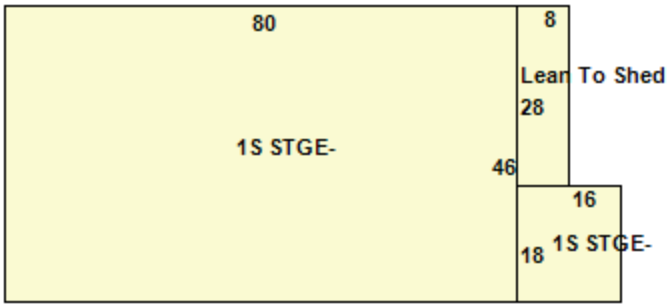
	Appraised Value	Assessed Value
Land	879,000	615,300
Buildings	621,200	434,840
Detached Outbuildings	796,200	557,340

	Appraised Value	Assessed Value
Total	2,296,400	1,607,480

Owner's Information

Owner's Data
HEBRON LIONS AGRICULTURAL SOCIETY INC 347 GILEAD ST HEBRON, CT 06248

Building 1



HEBRON LIONS CLUB

Hebron, CT

1 inch = 1125 Feet

0 1125 2250 3375

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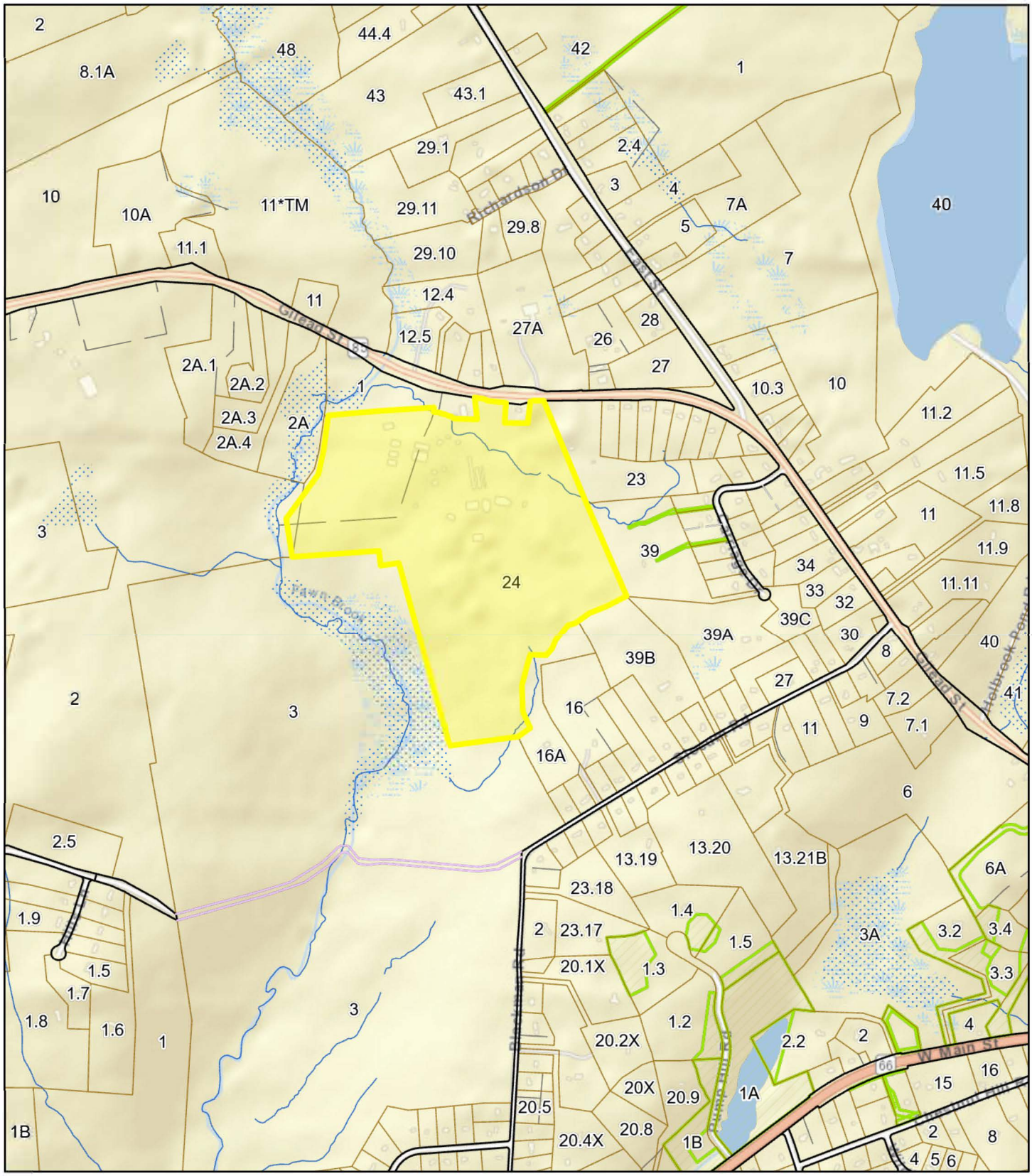
www.cai-tech.com



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

From: John Johnson Jr
To: Mark Roberts
Subject: Hebron Harvest Fair 2024
Date: Monday, June 10, 2024 11:16:55 AM

This email authorizes AT&T Wireless and/or its authorized agent to file for all necessary federal state or local permits and approvals for the proposed temporary wireless telecommunications facility located at the Hebron Lions Fairgrounds, Hebron, CT for the Hebron Harvest Fair 2024

John Johnson Jr, CVFM
Vice President, Hebron Lions Club
Fair Superintendent, Hebron Harvest Fair
Senior Advisor Elf, Hebron Lions Lights in Motion
www.HebronHarvestFair.org
www.LionsLightsInMotion.org
john.johnsonjr@hebronharvestfair.org

LOCATION OF AT&T TEMPORARY COLT – HEBRON HARVEST FAIR 2024

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

CT5888

347 Gilead St, Hebron, CT 06248

May 23, 2024

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed temporary deployment for Hebron Harvest Fair of AT&T antenna arrays on top of the Mini Super COLT (**C**ell **O**n **L**ight **T**ruck) at 40', 44' and 52' AGL located at 347 Gilead St in Hebron, CT. The coordinates of Super Colt are 41° 40' 12.81" N, 72° 23' 28.37" W.

AT&T is proposing the following:

1) Temporarily deploy multi-band antennas on its Mini Super Colt to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN") during the Hebron Harvest Fair celebration in Hebron, CT.

This report considers the planned antenna configuration for AT&T[1] to derive the resulting % Maximum Permissible Exposure of its proposed temporary deployment.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to AT&T's Radio Frequency Design Sheet updated 05/16/2024.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{EIRP}{\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{\left(H^2 + V^2\right)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

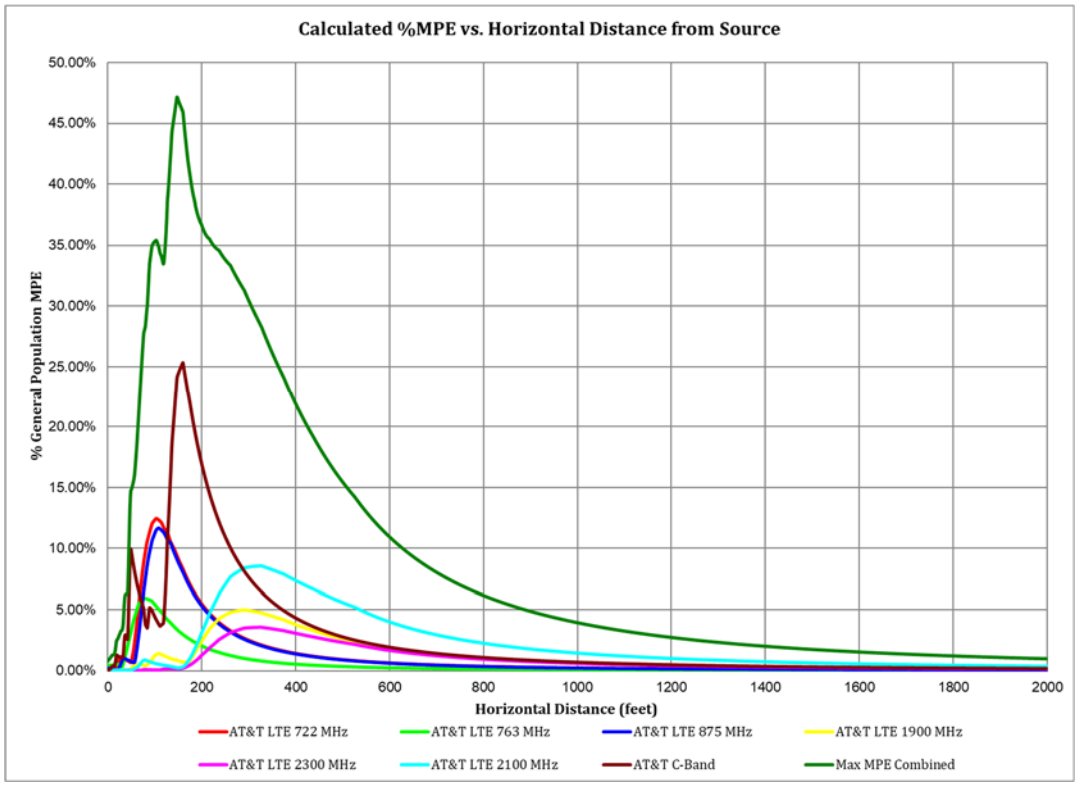


Figure 1: Graph of General Population % MPE vs. Distance

In the case of the COLT to be installed at Hebron Harvest Fair, each sector is configured differently. Separate analyses were run for each sector and Sector B was found to produce The highest percent of MPE (47.15% of the General Population limit) is calculated to occur at a horizontal distance of 147 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 1 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 147 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six-foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 1 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
AT&T C-Band	1	86.5	40.0	147	0.239698	1.000	23.97%
AT&T LTE 1900 MHz	1	160.0	52.0	147	0.008510	1.000	0.85%
AT&T LTE 2100 MHz	1	240.0	52.0	147	0.002489	1.000	0.25%
AT&T LTE 2300 MHz	1	100.0	52.0	147	0.001456	1.000	0.15%
AT&T LTE 722 MHz	1	160.0	52.0	147	0.045306	0.481	9.41%
AT&T LTE 763 MHz	1	160.0	44.0	147	0.017276	0.509	3.40%
AT&T LTE 875 MHz	1	160.0	52.0	147	0.053229	0.583	9.13%
						Total	**47.15%**

Table 1: Maximum Percent of General Population Exposure Values

5. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **47.15% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 147 feet away from the site.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Report Prepared By: Ram Acharya
RF Engineer 1
C Squared Systems, LLC

May 22, 2024
Date

Reviewed/Approved By: Martin J. Lavin
Senior RF Engineer
C Squared Systems, LLC

May 23, 2024
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2019, IEEE Standard Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2021, IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[2]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[3]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure

[2] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[3] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

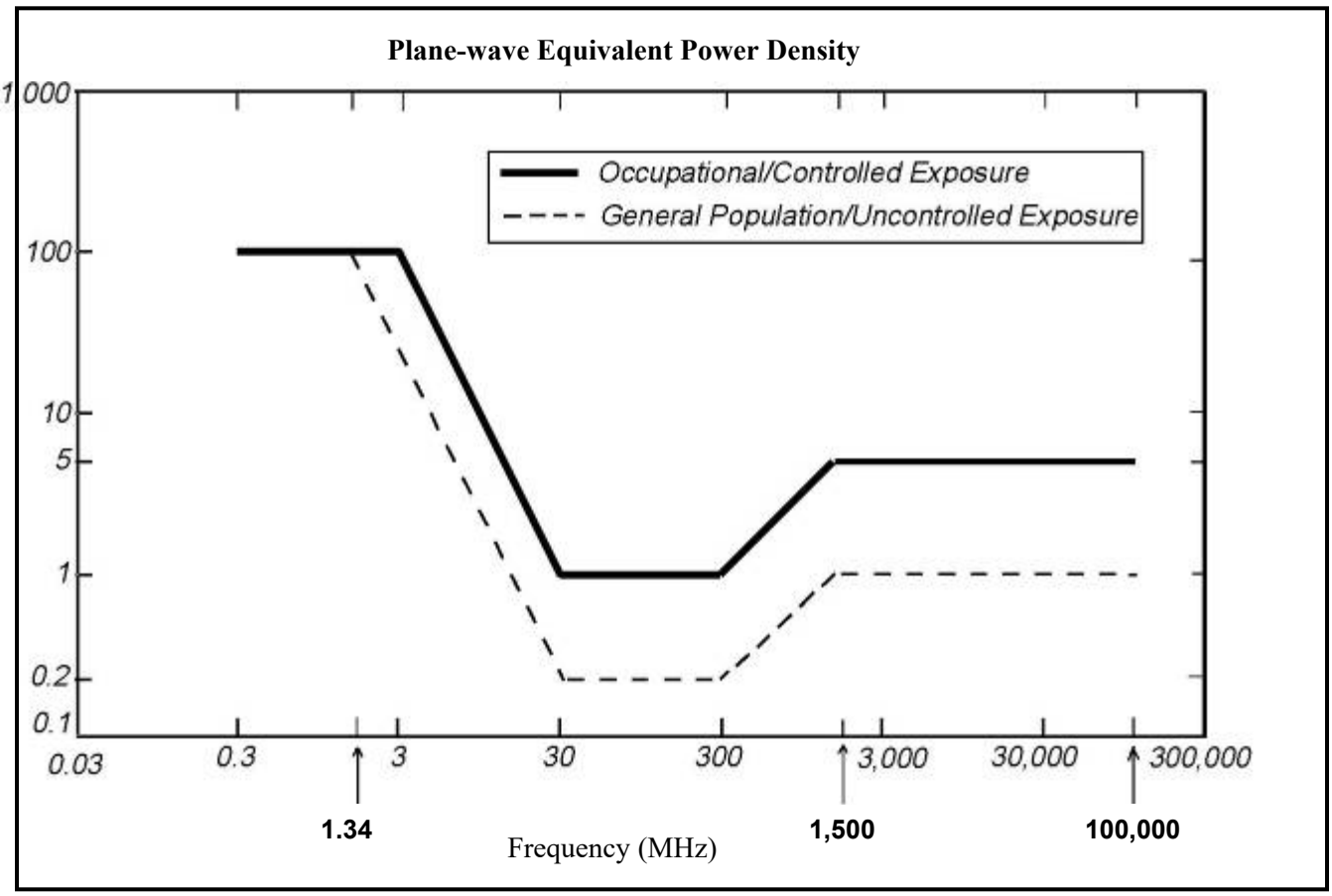
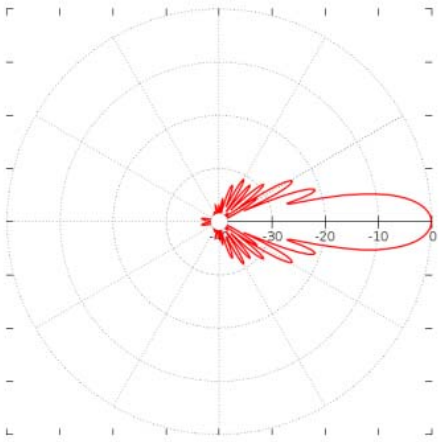
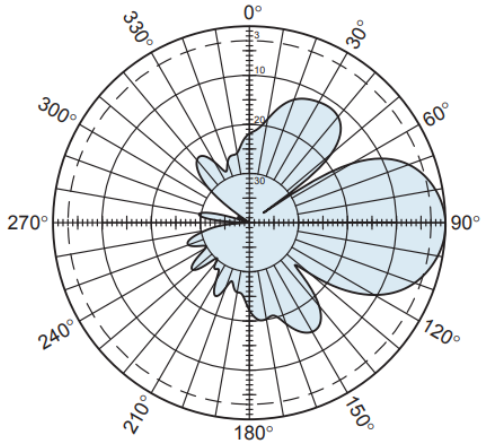
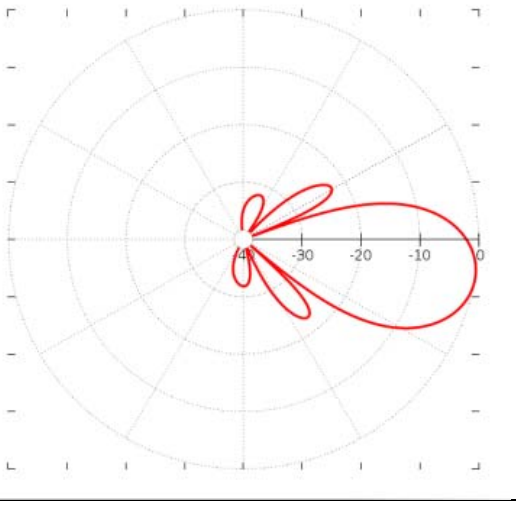
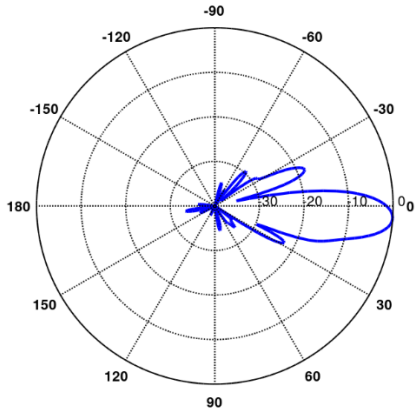


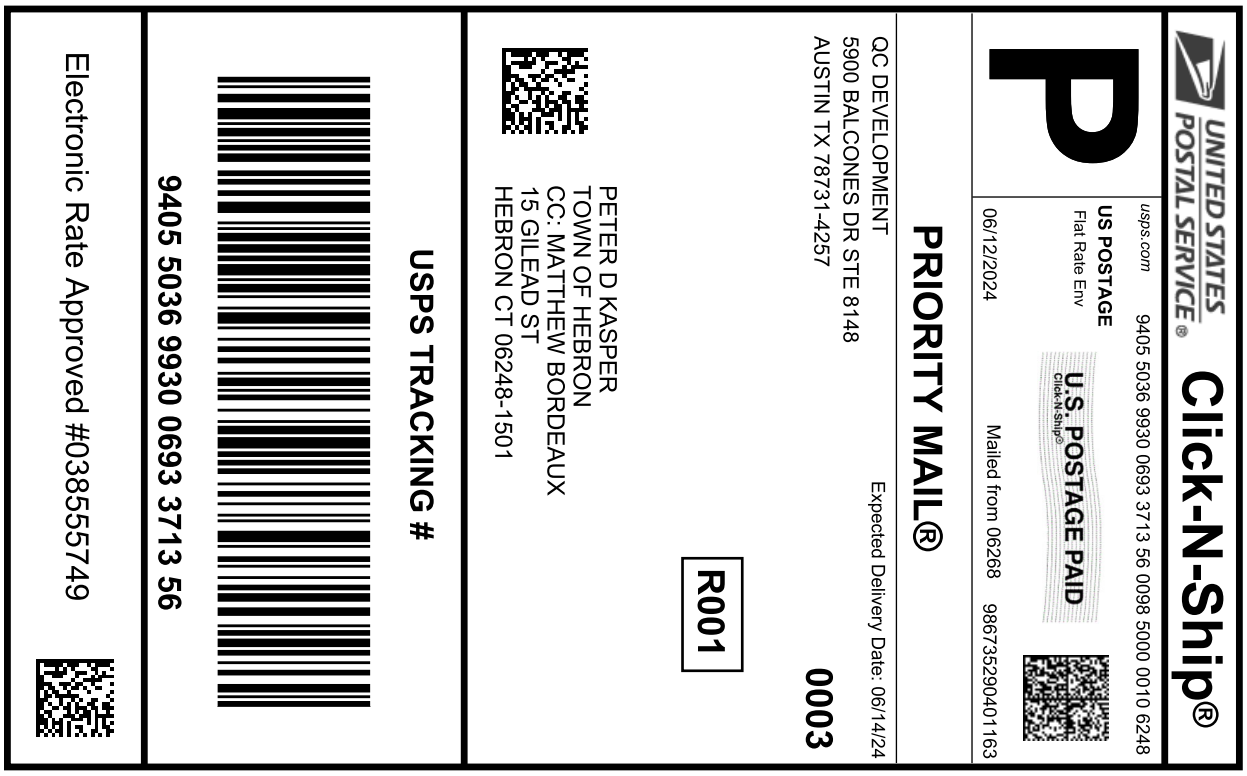
Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Mobility Antenna Model Data Sheets and Electrical Patterns

698-960 MHz Manufacturer: Matsing Model #: MS-6.3-DB90 Frequency Band: 698-960 MHz Gain: 16.5 dBi Vertical Beamwidth: 23° Horizontal Beamwidth: 23° Polarization: Dual Slant ±45° Size L x W x D: 41.4” x 46” x 45”	
698-894 MHz Manufacturer: Kathrein Model #: 840-10520 Frequency Band: 698-894 MHz Gain: 10.8 dBi Vertical Beamwidth: 36° Horizontal Beamwidth: 72° Polarization: ±45° Size L x W x D: 23.3” x 10.6” x 6.2”	
1695-2690 MHz Manufacturer: Matsing Model #: MS-6.3-DB90-A Frequency Band: 698-960 MHz Gain: 22.8 dBi Vertical Beamwidth: 12° Horizontal Beamwidth: 12° Polarization: Dual Slant ±45° Size L x W x D: 41.4” x 46” x 45”	

1850-1990 MHz	
Manufacturer:	CCI
Model #:	MBA10-6F-BU-H3
Frequency Band:	1850-1990 MHz
Gain:	23.9 dBi
Vertical Beamwidth:	4°
Horizontal Beamwidth:	11.4°
Polarization:	Dual Linear 45°
Size L x W x D:	40.8” x 83.0” x 11.3”





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Expected Delivery Date:	06/14/2024

Priority Mail® Postage:	**$9.85**
Total:	**$9.85**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: PETER D KASPER
TOWN OF HEBRON
CC: MATTHEW BORDEAUX
15 GILEAD ST
HEBRON CT 06248-1501

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13 June 2024 ⓘ

between

6:30am and 10:30am ⓘ

Your item is out for delivery on June 13, 2024 at 7:15 am in HEBRON, CT 06248.

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Delivered

Out for Delivery

Out for Delivery, Expected Delivery Between 6:30am and 10:30am

HEBRON, CT 06248
June 13, 2024, 7:15 am

Arrived at Post Office

HEBRON, CT 06248
June 13, 2024, 7:04 am

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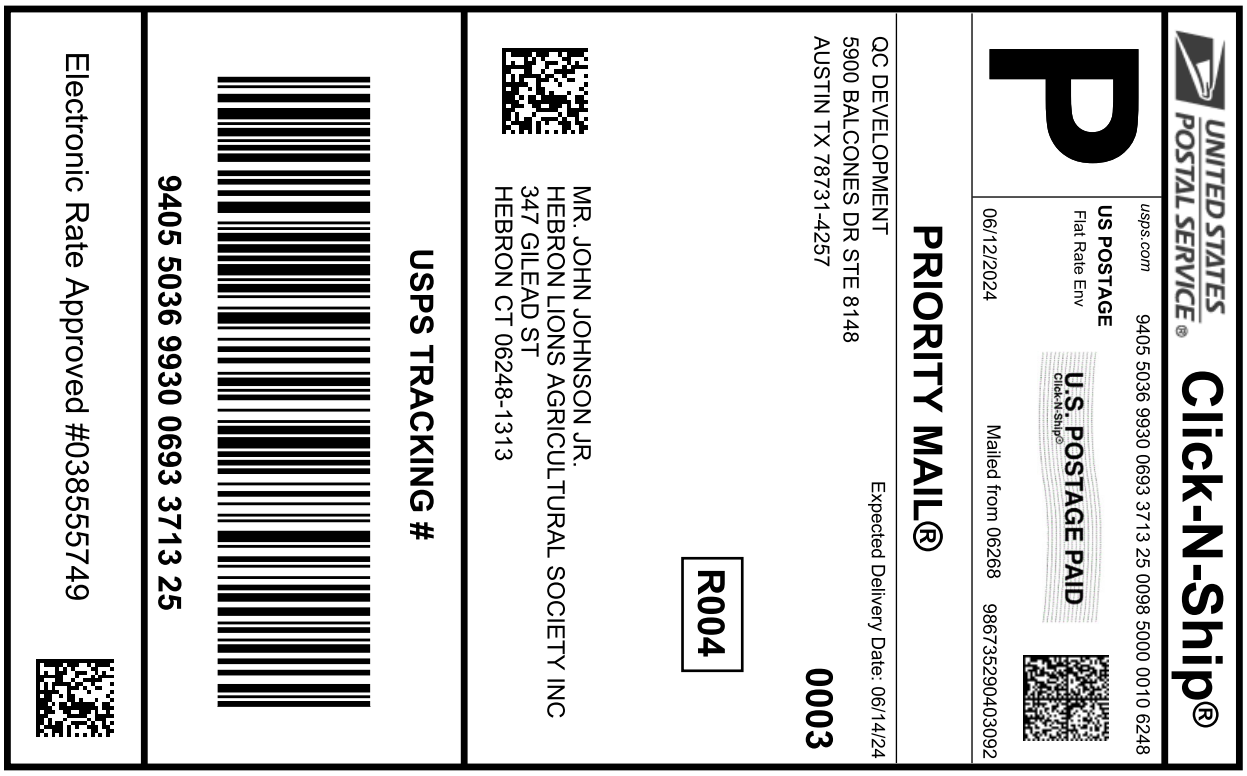
Feedback



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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0693 3713 25

Trans. #:	603127760
Print Date:	06/10/2024
Ship Date:	06/12/2024
Expected Delivery Date:	06/14/2024

Priority Mail® Postage:	**$9.85**
Total:	**$9.85**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: MR. JOHN JOHNSON JR.
HEBRON LIONS AGRICULTURAL SOCIETY INC
347 GILEAD ST
HEBRON CT 06248-1313

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Expected Delivery on

THURSDAY

13 June 2024 ⓘ

by **4:25pm** ⓘ

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Get More Out of USPS Tracking:

USPS Tracking Plus®

Delivered

Out for Delivery

Out for Delivery, Expected Delivery by 4:25pm

HEBRON, CT 06248
June 13, 2024, 7:14 am

Arrived at Post Office

HEBRON, CT 06248
June 13, 2024, 7:03 am

See All Tracking History

What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates

Feedback